May 27, 2004

APPLICATION FOR 2004 LARRY L. SAUTTER AWARD FOR INNOVATION IN INFORMATION TECHNOLOGY

University of California, Riverside - GROWL Web to CICS Interface

Introduction

In 1997, the University of California, Riverside (UCR) installed middleware (purchased from Edify Corporation) to “web enable” its legacy Student Information System (SIS). By 2002, UCR’s enrollment had grown to approximately 15,000 students (the campus had added about 1,000 students per year during this five year period). This rapid campus growth resulted in an operational crisis. UCR’s student self-service web applications were no longer responsive during peak registration periods (these products had become literally unusable during the first and second week of classes). All web development ceased and Edify was asked to bid on the hardware and software upgrades required to accommodate UCR’s increased workload. The bid response was troubling: a relatively minor improvement to the middleware infrastructure would cost $350,000 in license fees and $50,000 per year thereafter for maintenance. Computing and Communications had to find a better solution.

Recent releases of IBM’s OS/390 mainframe software include web service facilities. Using these web facilities available directly on the mainframe, C&C developed a mini-portal for UCR’s student body: a highly available, responsive, and scaleable “window into the world of student self-service applications”. The first application to run under this new infrastructure was a “grades display” utility, and the service was thus named GROWL (GRades and Online Web Links).

Benefits Resulting from New GROWL Environment

- **GROWL was introduced to campus without any INCREMENTAL COSTS.** Indeed, C&C obtained NO NEW FUNDING TO ELIMINATE THE EDIFY MIDDLEWARE. In fact, just the opposite is true: GROWL was implemented during a time of budget reductions.

- **GROWL utilizes existing COBOL libraries, I/O routines, etc. dramatically improving programming productivity.**

- **GROWL is responsive:** All student self-service web applications are available with immediate response, even during peak registration periods.

- **GROWL is scaleable:** During the past two years, NEW web self services applications have been added to GROWL and most Edify applications have been ported to the new environment.

- **GROWL has promoted a renewed sense of energy, collaboration, and creativity** in both C&C and the Vice Chancellor of Student Affairs office: non-traditional applications are now offered under GROWL, such as the “Survey of the Week” systems.
Self Service Applications Available Under GROWL

The following self-service applications are CURRENTLY available under GROWL (or will be ported over from the Edify platform by December of this year):

On-line Grades Display
On-line Statement (Billing Statement as of a particular due date)
On-line Current Account Activity (up to the moment student account / billing status)
On-line Course Confirmation / Class Schedule
On-line capability to Display/Change FERPA Settings
On-line capability to Change Student Pin
On-line capability to Display Student ID
On-line capability to Accept/Decline Financial Aid Awards New last 12 months
On-line capability to Request Financial Aid Award Revisions New last 12 months
On-line capability to Calculate and Display Summer Session Fees New last 6 months
On-line capability to Request Summer Session Financial Aid New last 6 months
On-line capability to Accept Credit Card Payments New last 30 days

On-line Address Change Migration from Edify to GROWL within 30 days.
On-line Financial Aid Packaging Migration from Edify to GROWL within 60 days.
On-line Degree Audit Migration from Edify to GROWL within 90 days.
On-line Registration and Wait List Migration from Edify to GROWL within 180 days.

Other:

On-line Access to VCSA Survey of the Week
Planned On-line Access to Admissions Application Status Web Site
A Look at GROWL

After logging in, students are presented with the main GROWL site, listing all available applications.

*** To keep your records secure, BE SURE to sign off ***
*** the system by pressing the EXIT button when you are finished. ***
The Statement of Account Displays the “Monthly Statement” which provides the amount due (as well as the due date). Historically, UCR mailed this statement to students. Currently, on the day the statement is produced, the student receives e-mail notification that statement is available, saving tremendous amounts of time and money.

Statement of Account
Federal Tax ID No. 95-6006142 (2004 Spring)
Deferred Payment Plan Apps will be accepted through 4/1/04 for Spring Quarter.
Please include Remittance form with payment.

Account Summary

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<th>Date</th>
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<th>Description</th>
<th>Charges</th>
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Failure to pay Spring 2004 tuition and fees by 4PM on 4/16/04 will result in a loss of student status.

For more information on your statement click [here](#)
Students are also e-mailed the day their financial aid awards are available; they sign on to GROWL and accept or decline their awards. For loans, they can also reduce the amount requested.
Students can evaluate progress toward their degree. Students can run a degree check on their current programs or evaluate a different program.
Technical Overview

GROWL uses 2 controlling (CGI) programs running in the web server portion of the mainframe communicating with 2 controlling programs running in CICS. The first CGI/CICS program pair authenticates and establishes a session. The second CGI/CICS program pair controls the student’s session linking to various CICS programs depending on the student’s request, logging activity, and timing out after periods of inactivity. As new applications are developed, the new applications simply “plug-in” to the existing control process.

Advantages of Mainframe Web Services

- Real time access to student information
- Uses the same programming language (COBOL) and technology as the existing SIS programs
- Uses existing shared I/O routines for SIS files
- Uses existing libraries for source and load module management
- Uses existing CICS/VSAM data integrity process
- Uses common calculation and update routines
- No extra hardware required
- No extra system software required
- Flexible growth and expansion
- Virtually unlimited growth potential
Customer Satisfaction

Students:

Students can now view billing statements, current activity, grades etc. as soon as they are available within SIS. They can also update their FERPA settings and pins as well as accept or decline financial aid immediately, or request revisions from the comfort of their homes, dorm rooms, or even while traveling on vacation. There are fewer lines to wait in and less of a need to even walk through the administration building.

Staff:

Financial Aid Counselors no longer have to manually post approximately 30,000 award letter accepts/declines. They are not handling paper requests for revisions. The Registrar’s Office is no longer processing paper FERPA requests or reprinting course confirmations for students. And, since GROWL was designed to authenticate with either SSN or Student ID, when a student forgets his Student ID, he can sign on to GROWL using his SSN, and display his SID.

Testimonials

“What a massive time saving this will be for the Operations unit not having to open the mail and post all of these awards. I continue to be filled with delight about how well this is going. “
- Patsi Anderson, Associate Director, Financial Aid

“I emailed one of my EAP student's this morning that was already in Mexico and extended to a Fall program and told her to access Growl to accept her 03-04 award. She responded back within 10 minutes and had accepted her awards and I confirmed the acceptance! She really appreciated the convenience and the fact that we could expedite her award being forwarded to her in another country!! She gives us a Thumbs Up!!!”
- Janice Owens, Financial Aid Counselor by way of Sheryl Hayes, Director, Financial Aid

“All:

I stumbled on this comment while browsing live journal with UCR as the theme. Great Job All!

Entry Posted at 4:41pm (today, Friday, 4/23/2004)
"Hey guys, they changed the layout for Growl...it looks really nice, go check it out! :) They should change the layout for Paws too. This school is slowly getting better and better, and will be great after the new Commons is built."

-Tom"
Submitted By:
Mary Livaudais, Manager, Student Information Systems
mary.livaudais@ucr.edu
(909)787-2072

Project Team:
Mary Livaudais, Project Lead, Manager, Student Information Systems
Bob Moore, Systems Programmer
Olivia Salinas, Programmer/Analyst
John Vidhyarkorn, Programmer/Analyst
Francisco Sola, Programmer/Analyst
Tom Hsu, Programmer/Analyst
Nasser Solomon, Manager, Center for Visual Computing